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SUITE 400

TROY, MI 48098

EXAMINER

GHULAMALI, QUTBUDDIN

ART UNIT

PAPER NUMBER

2611

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Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                            |  |
|------------------------------|-------------------------------|----------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/080,826 | Applicant(s)<br>HSU ET AL. |  |
|                              | Examiner<br>Qutub Ghulamali   | Art Unit<br>2611           |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9, 19-65, 69-120 and 124-128 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9, 19-21, 27-35, 37-44, 46-53, 55-65, 69-77, 83-86, 88-95, 97-104 and 106-120 is/are rejected.
- 7) ☒ Claim(s) 4-8, 22-26, 36, 45, 54, 78-82, 87, 96, 105 and 124-128 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. This Office Action is responsive to applicant's Remarks/Amendments filed on 06/06/2006.
2. The applicant's election of Group I claims 1-9, 19-65, 69-120 and 124-128 is hereby acknowledged.

### ***Response to Arguments***

3. Applicant's arguments/amendments, filed 06/06/2006, with respect to claims 1-4, 6-9, 19-22, 37-44, 46-65, 69-77, 83-104, 106-120 have been considered but are moot in view of the new ground(s) of rejection.

The rejection follows:

### ***Claim Objections***

4. Claims 4, 5, 19, 33, 58, 78, 124 are objected to because of the following informalities:

Claim 4, line 4, after "decoding processing logic", the words "capable of" should be replaced with -- for --.

Claim 4, line 5, after "information upon", the word "perceiving" should be replaced with -- receiving --.

Claim 5, line 3, after "logic to correlate the", the word "perceived" should be replaced with -- received --.

Claim 19, line 2, after "a feedback equalizer" the words "capable of" should be replaced with -- for --.

Claim 33, line 1, after "wherein the symbol", the word "\waveform" should be replaced with the word -- waveform --.

Claim 58, line 1, "Claim 41", should be replaced with -- claim 50 --, to reflect proper dependency to claim 50.

Claim 78, line 11, after "less than the", the word "fast" needs to be replaced with -- first --.

Claim 78, line 13, after "said remodulation unit" the words "capable of" should be replaced with -- for --.

Claim 78, last line, after "equalizer to equalize the", shouldn't "modulated be replaced with -- remodulated --.

Claim 124, line 6, after "decoding means for" the word "deciding" should be replaced with -- decoding --.

Appropriate corrections are required.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 32-35, 37, 41-44, 46, 50-53, 55, are rejected under 35 U.S.C. 102(b) as being anticipated by Gelfand et al (USP 6,144,697).

Regarding claim 32, Gelfand discloses a decoding method for a modulated signal (subsystem 56) (col. 6, lines 23-27) comprising:

generating a sub-symbol waveform upon receipt of a second number of chips of the symbol, the second number being less than the first number (the second number is a subset of the first, reduced by the inter-symbol interference equalizer function) (col. 3, lines 12-23, 34-37; and

equalizing the modulated signal using the sub-symbol waveform (the filter equalizes by reducing interference) (col. 3, lines 33-37, 40-54).

Regarding claims 33, 42, 51, Gelfand discloses a third number of chips (provides even and odd number samples), the third number being less than or equal to the second number (col. 9, lines 44-67; col. 10, lines 1-44; col. 12, lines 7-13, 29-49).

Regarding claims 34, 43, 52 Gelfand discloses feedback equalizer further comprising, a hard decision unit (66) coupled to said equalizer for determining hard decision information associated with the modulated signal (col. 6, lines 43-50); and a feedback filter (80) coupled to said hard decision unit and said symbol processor to selectively equalize the modulated signal using one of the hard decision information and the sub-symbol waveform (col. 6, lines 50-59).

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Regarding claims 35, 44, 53 Gelfand discloses generating decoded sub-symbol information (68) upon receiving the second number of chips of the symbol; and Generate a sub-symbol waveform corresponding to the decoded sub-symbol information (col. 3, lines 33-37, 40-54).

Regarding claims 37, 46, 55 Gelfand discloses information processor perform decoding the symbol upon receipt of the first number of chips defining the symbol (col. 3, lines 3-8, 13-23; col. 4, lines 52-60; col. 6, lines 16-34, 40-59).

Regarding claims 41 and 50, Gelfand discloses receiver (50) has hardware or programming (col. 12, lines 1-21) comprising:  
receiving a modulated signal, the modulated signal including a symbol defined by a first number of chips (col. 3, lines 3-8, 13-23; col. 4, lines 52-60; col. 18, lines 1-15);  
generating a sub-symbol waveform upon receipt of a second number of chips of the symbol, the second number being less than the first number (col. 3, lines 3-8, 13-23; col. 5, lines 20-51); and  
equalizing the modulated signal using the sub-symbol waveform (col. 3, lines 33-37, 40-54; col. 6, lines 16-22).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gelfand et al (USP 6,144,697) in view of Blinn et al (US Pub 2003/0151469).

Regarding claims 1 and 19, Gelfand discloses generating a sub-symbol processor coupled to feedback equalizer to generate a subsymbol waveform upon receipt of a second number of chips of the first symbol, and provide the subsymbol waveform to the feedback equalizer the second number being less than the first number (the second number is a subset of the first, reduced by the inter-symbol interference equalizer function and represents a number less than the first) (col. 3, lines 12-23, 34-37 said feedback equalizer to equalize the modulated signal using the sub-symbol waveform (filter equalizes by reducing interference) (col. 3, lines 33-37, 40-54).

Gelfand, although discloses a sequence or stream of discrete values such as signal samples or symbols (col. 4, lines 45-60), however, does not explicitly show a plurality of symbols, the plurality of symbols including a first symbol defined by a first number of chips. Blinn in a similar field of endeavor discloses a modulated signal comprising a plurality of symbols (transmission blocks  $Stb$  are broken down into  $n$  time-discrete sample values or symbols), the plurality of symbols including a first symbol defined by a first number of chips ( $n$  frequency-discrete subsymbols  $nfb$ ) (page 3, sections 0025, 0026). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a plurality of symbols (transmission blocks  $Stb$  are broken down into  $n$  time-discrete sample values or symbols), the plurality of symbols including a first symbol defined by a first number of chips ( $n$  frequency-discrete subsymbols  $nfb$ )

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as taught by Blinn in the system of Gelfand because it can allow feedback equalizer to optimize filter coefficients with use of small number of filter subsets or coefficients.

Regarding claims 2 and 20, Gelfand discloses a third number of chips (provides even and odd number samples), the third number being less than or equal to the second number (col. 9, lines 44-67; col. 10, lines 1-44; col. 12, lines 7-13, 29-49).

As to claims 3 and 21, Gelfand discloses feedback equalizer further comprising, a hard decision unit (66) coupled to said equalizer for determining hard decision information associated with the modulated signal (col. 6, lines 43-50); and a feedback filter (80) coupled to said hard decision unit and said subsymbol processor to selectively equalize the modulated signal using one of the hard decision information and the sub-symbol waveform (col. 6, lines 50-59).

9. Claims 9, 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gelfand et al (USP 6,144,697) in view of Blinn et al (US Pub 2003/0151469), and further in view of Andren et al (USP 6,603,801).

Regarding claims 9 and 27, Gelfand and Blinn combined disclose all limitations of the claim. The combination however, is silent regarding symbol is modulated in accordance with one of Barker spreading and complementary code keying (CCK) compliant with IEEE Standard 802.11b standard. Andren in a similar field of endeavor discloses symbol is modulated in accordance with one of Barker spreading and complementary code keying (CCK) compliant with IEEE Standard 802.11 standard (col. 14, lines 53-56) (col. 6, lines 7-16). It would have been obvious to a person of ordinary

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skill in the art at the time the invention was made to use Barker spreading and CCK codes as taught by Andren in the combined system of Gelfand and Blinn because it can allow diversity and significant throughput of signals at low cost.

Regarding claim 28, Gelfand and Blinn combined disclose all limitations of the claim. The combination however, is silent regarding transceiver with RF and IF sections coupled to feedback equalizer to provide modulated signal to feedback equalizer. Andren in a similar field of endeavor discloses transceiver with RF and IF sections coupled to feedback equalizer to provide modulated signal to feedback equalizer (col. 6, lines 17-31, 48-55). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the RF and IF of transceiver as taught by Andren in the combined system of Gelfand and Blinn because it can provide proper signal conversion and optimize network throughput with modulating signals.

As per claim 29, Gelfand discloses base station comprise the transceiver (col. 4, lines 61-63).

As per claim 30, Gelfand discloses network card comprising transceiver (a network card is inherently implied with any processor) as disclosed in col. 4, lines 43-47

Regarding claim 31, Gelfand's transceiver is an information processing system as disclosed (col. 2, lines 14-20).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 38-40, 47-49, 56-58, 83-86, 88-95, 97-100, 101-104, 106-120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gelfand et al (USP 6,144,697) in view of Andren et al (USP 6,603,801).

Regarding claims 38, 47, 56, 89, 98, 107, Gelfand discloses processing logic comprise first and second demodulation decoding pathways for decoding the symbol by at least one of first and second distinct modulation modes (col. 6, lines 5-27, 30-42).

Regarding claims 39, 40, 48, 49, 57, 58, 90, 91, 100, 109, and 116, Gelfand discloses all limitations of the claim. Gelfand however, is silent regarding symbol is modulated in accordance with one of Barker spreading and complementary code keying (CCK) compliant with IEEE Standard 802.11b (1999). Andren in a similar field of endeavor discloses symbol is modulated in accordance with one of Barker spreading and complementary code keying (CCK) compliant with IEEE Standard 802.11b (1999) (col. 14, lines 53-56) (col. 6, lines 7-16). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Barker spreading and CCK codes as taught by Andren in the system of Gelfand because it can allow diversity and significant throughput of signals at low cost.

As to claims 83, 92, 101 and 114, the steps claimed as an apparatus is nothing more than restating the function of the specific components of the apparatus as claimed above and therefore, it would have been obvious, considering the aforementioned rejection for the apparatus claims 1-3, 9, to a person of ordinary skill in the art at the

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time the invention was made to use the means for receiving the modulated signal and generate a sub-symbol waveform because it can equalize the modulated signal using sub-symbols.

As per claims 84, 93, 102, Gelfand discloses a third number of chips (provides even and odd number samples), the third number being less than or equal to the second number (col. 9, lines 44-67; col. 10, lines 1-44; col. 12, lines 7-13, 29-49).

Regarding claims 85, 94, 103 Gelfand discloses feedback equalizer further comprising, a hard decision unit (66) coupled to said equalizer for determining hard decision information associated with the modulated signal (col. 6, lines 43-50); and a feedback filter (80) coupled to said hard decision unit and said symbol processor to selectively equalize the modulated signal using one of the hard decision information and the sub-symbol waveform (col. 6, lines 50-59).

Regarding claim 110, Gelfand discloses transceiver comprising RF and IF sections coupled to feedback equalizer to provide the modulated signal to said feedback equalizer (in a transceiver (transmitter and a receiver) RF and IF processing is inherently implied though not explicitly shown (col. 4, lines 43-47).

As per claim 111, Gelfand discloses base station comprise the transceiver (col. 4, lines 61-63).

As per claim 112, Gelfand discloses network card comprising transceiver (a network card is inherently implied (processor) as disclosed in col. 4, lines 43-47).

Regarding claim 113, Gelfand discloses information processing system comprise transceiver (col. 4, lines 43-46).

As per claim 117, Gelfand discloses transceiver comprises a decoder (col. 6, lines 23-26).

As per claim 118, Gelfand discloses base station comprise the transceiver (col. 4, lines 61-63).

As per claim 119, Gelfand discloses network card comprising transceiver (a network card is inherently implied (processor) as disclosed in col. 4, lines 43-47).

Regarding claim 120, Gelfand discloses information processing system comprise transceiver (col. 4, lines 43-46).

### ***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 59-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gelfand et al (USP 6,144,697) in view of Andren et al (USP 6,603,801).

Regarding claim 59, Gelfand discloses a decoder (subsystem 56) (col. 6, lines 23-27) comprising:

a symbol processor coupled to said feedback equalizer to generate a decoded waveform upon receipt of a second number of chips less than the first number (the first

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number is a subset of the first, reduced by the inter-symbol interference equalizer function) and provide the decoded waveform to the feedback equalizer, said feedback equalizer to equalize the modulated signal using the decoded waveform (col. 3, lines 33-37, 40-54; col. 6, lines 16-22). Gelfand however, does not explicitly disclose, a feedback equalizer for receiving a modulated signal, the modulated signal including a plurality of symbols including a Barker encoded symbol defined by a first number of chips. Andren in a similar field of endeavor discloses a feedback equalizer capable of receiving a modulated signal, the modulated signal including a Barker encoded symbol defined by a first number of chips (col. 6, lines 48-59; col. 8, lines 25-28; col. 11, lines 55-61). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a Barker encoded symbol defined by a first number of chips as taught by Andren in the system of Gelfand because inclusion of Barker encoding can provide useful error rate performance in the modulation and demodulation of symbols and optimize network throughput.

As per claim 60, Gelfand discloses the modulated signal includes non-Barker encoded symbols considered well known in the art (col. 9, lines 19-32, 36-44).

Regarding claim 61, Gelfand discloses all limitations of the claim. Gelfand however, is silent regarding the non-Barker encode symbol comprises code keying (CCK) encoded symbol; and wherein the Barker encoded and CCK encoded symbols are modulated in compliance with IEEE Standard 802.11b (1999). Andren in a similar field of endeavor discloses symbol is modulated in accordance with one of Barker spreading and complementary

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code keying (CCK) compliant with IEEE Standard 802.11b (1999) (col. 14, lines 53-56) (col. 6, lines 7-16). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Barker spreading and CCK codes as taught by Andren in the system of Gelfand because it can allow diversity and significant throughput of signals at low cost.

As per claim 62, Gelfand discloses transceiver comprises a decoder (col. 6, lines 23-26).

As per claim 63, Gelfand discloses base station comprise the transceiver (col. 4, lines 61-63).

As per claim 64, Gelfand discloses network card comprising transceiver (a network card is inherently implied with any processor) as disclosed in col. 4, lines 43-47.

Regarding claim 65, Gelfand's transceiver is an information processing system as disclosed (col. 2, lines 14-20).

### ***Claim Rejections - 35 USC § 102***

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 69-71, are rejected under 35 U.S.C. 102(e) as being anticipated by Andren et al (USP 6,603,801).

Regarding claim 69, Andren discloses decoding method for modulated signal including a Barker encoded symbol comprising:  
generating a decoded waveform upon receipt of a second number (precursor portion) of chips less than the first number of chips of the Barker encoded symbol (col. 2, lines 46-56; col. 3, lines 17-36; col. 16, lines 25-35); and  
equalizing the modulated signal using the decided waveform (col. 2, lines 46-56; col. 3, lines 17-36).

Regarding claim 70, Andren discloses the modulated signal further includes a non-Barker encoded symbol defined by a second number of chips (col. 11, lines 55-60).

As per claim 71, Andren discloses the non-Barker encoded symbol comprises a CCK encoded symbol (col. 14, lines 53-56); and  
wherein the Barker encoded and CCK encoded symbols are modulated in compliance with IEEE Standard 802. 11b, (col. 6, lines 7-16).

### ***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 72-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andren et al (USP 6,603,801).

Regarding claims 72 and 75, Andren discloses his transceiver can be implemented/integrated with any processor such as a computer (processors usually are regarded to have memory to perform program code operations) making it an obvious choice to a person of ordinary skill in the art at the time the invention was made to utilize. Andren further discloses decoding method comprising: receiving a modulated signal including a plurality of symbols including a Barker encoded symbol defined by a first number of chips (col. 3, lines 17-36; col. 16, lines 25-35); generating a decoded waveform upon receipt of the first number of chips of the symbol (col. 3, lines 17-36; col. 16, lines 25-35); and equalizing the modulated signal using the decided waveform (col. 2, lines 46-56; col. 3, lines 17-36).

Regarding claims 73 and 76, Andren discloses the modulated signal further includes a non-Barker encoded symbol defined by a second number of chips (col. 11, lines 55-60).

As per claims 74 and 77, Andren discloses the non-Barker encoded symbol comprises a CCK encoded symbol (col. 14, lines 53-56); and wherein the Barker encoded and CCK encoded symbols are modulated in compliance with IEEE Standard 802. 11b, (col. 6, lines 7-16).

### ***Allowable Subject Matter***

18. Claims 78-82 and 124-128 would be allowable if rewritten or amended to overcome the claim objections, set forth in this Office action.

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19. Claims 4-8, 22-26, 36, 45, 54, 87, 96, 105 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including *all of the limitations of the base claim and any intervening claims* and further amended to overcome the claim objections, set forth in this Office action.

### ***Conclusion***

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Pub. 2002/0070796 to Gay-Bellile et al.

US Pub. 2003/0095588 to Yellin et al.

US Pub. 2003/0016640 to Onggosanusi et al.

US Pub. 200/0009064 to Blessent et al.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.  
Examiner,  
AU-2611.  
September 6, 2006.

  
MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER